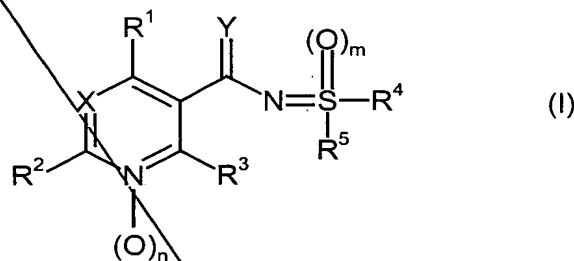


What is claimed is:

1. An acylsulfimide of the formula (I) and salts thereof,



where the symbols and indices are as defined below:

X is CH or N;

Y is O or S;

n is 0 or 1;

m is 0 or 1;

R¹ is C₁-C₆-haloalkyl;

R², R³ are identical or different and are H, halogen or a branched or unbranched (C₁-C₆)-alkyl group, where one or two CH₂ groups may be replaced by -O- or -S- or -N(C₁-C₆)-alkyl, with the proviso that heteroatoms may not be adjacent to one another;

R⁴, R⁵ are identical or different and are R⁶, -C(LW)R⁷, -C(=NOR⁷)R⁷, -C(=NNR⁷₂)R⁷, -C(=W)OR⁷, -C(=W)NR⁷₂, -OC(=W)R⁷, -OC(=W)OR⁷, -NR⁷C(=W)R⁷, -N[C(=W)R⁷]₂, -NR⁷C(=W)OR⁷, -C(=W)NR⁷-NR⁷₂, -C(=W)NR⁷-NR⁷[C(=W)R⁷], -NR⁷-C(=W)NR⁷₂, -NR⁷-NR⁷C(=W)R⁷, -NR⁷-N[C(=W)R⁷]₂, -N[(C=W)R⁷]-NR⁷₂, -NR⁷-NR⁷[(C=W)WR⁷], -NR⁷[(C=W)NR⁷₂], -NR⁷(C=NR⁷)R⁷, -NR⁷(C=NR⁷)NR⁷₂, -O-NR⁷₂, -O-NR⁷(C=W)R⁷, -SO₂NR⁷₂, -NR⁷SO₂R⁷, -SO₂OR⁷, -OSO₂R⁷, -OR⁷, -NR⁷₂, -SR⁷, -SiR⁷₃, -PR⁷₂, -P(=W)R⁷, -SOR⁷, -SO₂R⁷, -PW₂R⁷₂, -PW₃R⁷₂;

or

B1 cont
 R^4 and R^5 together with the sulfur to which they are attached form a three- to eight-membered saturated or unsaturated ring system which is optionally mono- or polysubstituted, and which optionally contains 1 to 4 further heteroatoms, where two or more of the substituents optionally form one or more further ring systems;

W is O or S;

R^6 are identical or different and are (C_1-C_{20}) -alkyl, (C_2-C_{20}) -alkenyl, (C_2-C_{20}) -alkynyl, (C_3-C_8) -cycloalkyl, (C_4-C_8) -cycloalkenyl, (C_8-C_{10}) -cycloalkynyl, aryl or heterocyclyl, where the radicals mentioned may optionally be mono- or polysubstituted, and

R^7 is identical or different and is H or R^6 .

2. An acylsulfimide as claimed in claim 1, where
 X is CH.

3. An acylsulfimide as claimed in claim 1, where
 Y is O.

4. An acylsulfimide as claimed in claim 1, where
 n is 0.

5. An acylsulfimide as claimed in claim 1, where
 R^1 is (C_1-C_6) -alkyl which is mono- or polysubstituted by F and/or Cl.

6. An acylsulfimide as claimed in claim 1, where the radicals R^4 , R^5 are substituted by one or more radicals R^8 and where R^8 has the following meaning:

R^8 are identical or different and are R^9 , or two radicals R^8 together with the atoms to which they are attached form a three- to eight-membered saturated or unsaturated ring system, optionally substituted by one or more radicals R^9 , which optionally also contains further heteroatoms;

R^9 are identical or different and are R^{10} , R^{11} , $-C(W)R^{10}$, $-C(=NOR^{10})R^{10}$, $-C(=NNR^{10}_2)R^{10}$, $-C(=W)OR^{10}$, $-C(=W)NR^{10}_2$, $-OC(=W)R^{10}$, $-OC(=W)OR^{10}$, $-NR^{10}C(=W)R^{10}$, $-N[C(=W)R^{10}]_2$, $-NR^{10}C(=W)OR^{10}$,

B'
Cont

-C(=W)NR¹⁰-NR¹⁰₂, -C(=W)NR¹⁰-NR¹⁰[C(=W)R¹⁰], -NR¹⁰-C(=W)NR¹⁰₂,
 -NR¹⁰-NR¹⁰C(=W)R¹⁰, -NR¹⁰-N[C(=W)R¹⁰]₂, -N[(C=W)R¹⁰]-NR¹⁰₂,
 -NR¹⁰-N[(C=W)WR¹⁰], -NR¹⁰[(C=W)NR¹⁰₂], -NR¹⁰(C=NR¹⁰)R¹⁰,
 -NR¹⁰(C=NR¹⁰)NR¹⁰₂, -O-NR¹⁰₂, -O-NR¹⁰(C=W)R¹⁰, -SO₂NR¹⁰₂,
 -NR¹⁰SO₂R¹⁰, -SO₂OR¹⁰, -OSO₂R¹⁰, -OR¹⁰, -NR¹⁰₂, -SR¹⁰, -SiR¹⁰₃,
 -PR¹⁰₂, -P(=W)R¹⁰₂, -SOR¹⁰, -SO₂R¹⁰, -PW₂R¹⁰₂, -PW₃R¹⁰₂; or two radicals R⁹
 together form (=W), (=NR¹⁰), (=CR¹⁰₂), (=CHR¹⁰) or (=CH₂);

R¹⁰ are identical or different and are (C₁-C₆)-alkyl, (C₂-C₆)-alkenyl, (C₂-C₆)-alkynyl,
 (C₃-C₈)-cycloalkyl, (C₄-C₈)-cycloalkenyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkyl, (C₄-C₈)-
 cycloalkenyl-(C₁-C₄)-alkyl, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyl, (C₄-C₈)-cycloalkenyl-
 (C₂-C₄)-alkenyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkyl,
 (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyl, (C₂-C₆)-
 alkenyl-(C₄-C₈)-cycloalkenyl, aryl, heterocyclyl;

where the radicals mentioned are optionally substituted by one or more radicals
 R¹¹; and

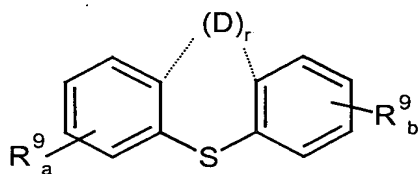
R¹¹ are identical or different and are halogen, cyano, nitro, hydroxyl, thio, amino,
 formyl, (C₁-C₆)-alkanoyl, (C₁-C₆)-alkoxy, (C₃-C₆)-alkenyloxy, (C₃-C₆)-alkynyloxy,
 (C₁-C₆)-haloalkyloxy, (C₃-C₆)-haloalkenyloxy, (C₃-C₆)-haloalkynyloxy, (C₃-C₈)-
 cycloalkoxy, (C₄-C₈)-cycloalkenyloxy, (C₃-C₈)-halocycloalkoxy, (C₄-C₈)-
 halocycloalkenyloxy, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkoxy,
 (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkoxy, (C₃-C₈)-cycloalkyl-(C₂-C₄)-alkenyloxy, (C₄-
 C₈)-cycloalkenyl-(C₁-C₄)-alkenyloxy, (C₁-C₆)-alkyl-
 (C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkoxy, (C₂-C₆)-alkynyl-(C₃-C₈)-
 cycloalkoxy, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenyloxy,
 (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenyloxy, (C₁-C₄)-alkoxy-(C₁-C₆)-alkoxy, (C₁-C₄)-
 alkoxy-(C₃-C₆)-alkenyloxy, carbamoyl, (C₁-C₆)-mono- or dialkylcarbamoyl, (C₁-C₆)-
 mono- or dihaloalkylcarbamoyl,
 (C₃-C₈)-mono- or dicycloalkylcarbamoyl, (C₁-C₆)-alkoxycarbonyl, (C₃-C₈)-
 cycloalkoxycarbonyl, (C₁-C₆)-alkanoyloxy, (C₃-C₈)-cycloalkanoyloxy, (C₁-C₆)-
 haloalkoxycarbonyl, (C₁-C₆)-haloalkanoyloxy, (C₁-C₆)-alkanamido, (C₁-C₆)-
 haloalkanamido, (C₂-C₆)-alkenamido, (C₃-C₈)-cycloalkanamido, (C₃-C₈)-cycloalkyl-
 (C₁-C₄)-alkanamido, (C₁-C₆)-alkylthio, (C₃-C₆)-alkenylthio, (C₃-C₆)-alkynylthio, (C₁-
 C₆)-haloalkylthio, (C₃-C₆)-haloalkenylthio, (C₃-C₆)-haloalkynylthio, (C₃-C₈)-
 cycloalkylthio, (C₄-C₈)-cycloalkenylthio, (C₃-C₈)-halocycloalkylthio, (C₄-C₈)-

halocycloalkenylthio, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylthio, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylthio, (C₃-C₈)-cycloalkyl-(C₃-C₄)-alkenylthio, (C₄-C₈)-cycloalkenyl-(C₃-C₄)-alkenylthio, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylthio, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylthio, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylthio, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylthio, (C₁-C₆)-alkylsulfinyl, (C₃-C₆)-alkenylsulfinyl, (C₃-C₆)-alkynylsulfinyl, (C₁-C₆)-haloalkylsulfinyl, (C₃-C₆)-haloalkenylsulfinyl, (C₃-C₆)-haloalkynylsulfinyl, (C₃-C₈)-cycloalkylsulfinyl, (C₄-C₈)-cycloalkenylsulfinyl, (C₃-C₈)-halocycloalkylsulfinyl, (C₄-C₈)-halocycloalkenylsulfinyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfinyl, (C₃-C₈)-cycloalkyl-(C₃-C₄)-alkenylsulfinyl, (C₄-C₈)-cycloalkenyl-(C₃-C₄)-alkenylsulfinyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfinyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfinyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylsulfinyl, (C₁-C₆)-alkylsulfonyl, (C₃-C₆)-alkenylsulfonyl, (C₃-C₆)-alkynylsulfonyl, (C₁-C₆)-haloalkylsulfonyl, (C₃-C₆)-haloalkenylsulfonyl, (C₃-C₆)-haloalkynylsulfonyl, (C₃-C₈)-cycloalkylsulfonyl, (C₄-C₈)-cycloalkenylsulfonyl, (C₃-C₈)-halocycloalkylsulfonyl, (C₄-C₈)-halocycloalkenylsulfonyl, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylsulfonyl, (C₃-C₈)-cycloalkyl-(C₃-C₄)-alkenylsulfonyl, (C₄-C₈)-cycloalkenyl-(C₃-C₄)-alkenylsulfonyl, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylsulfonyl, (C₂-C₆)-alkynyl-(C₃-C₈)-cycloalkylsulfonyl, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylsulfonyl, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylsulfonyl, (C₁-C₆)-dialkylamino, (C₁-C₆)-alkylamino, (C₃-C₆)-alkenylamino, (C₃-C₆)-alkynylamino, (C₁-C₆)-haloalkylamino, (C₃-C₆)-haloalkenylamino, (C₃-C₆)-haloalkynylamino, (C₃-C₈)-cycloalkylamino, (C₄-C₈)-cycloalkenylamino, (C₃-C₈)-halocycloalkylamino, (C₄-C₈)-halocycloalkenylamino, (C₃-C₈)-cycloalkyl-(C₁-C₄)-alkylamino, (C₄-C₈)-cycloalkenyl-(C₁-C₄)-alkylamino, (C₃-C₈)-cycloalkyl-(C₃-C₄)-alkenylamino, (C₄-C₈)-cycloalkenyl-(C₃-C₄)-alkenylamino, (C₁-C₆)-alkyl-(C₃-C₈)-cycloalkylamino, (C₂-C₆)-alkenyl-(C₃-C₈)-cycloalkylamino, (C₁-C₆)-alkyl-(C₄-C₈)-cycloalkenylamino, (C₂-C₆)-alkenyl-(C₄-C₈)-cycloalkenylamino, (C₁-C₆)-trialkylsilyl, aryl, aryloxy, arylthio, arylamino, aryl-(C₁-C₄)-alkoxy, aryl-(C₃-C₄)-alkenyloxy, aryl-(C₁-C₄)-alkylthio, aryl-(C₂-C₄)-alkenylthio, aryl-(C₁-C₄)-alkylamino, aryl-(C₃-C₄)-alkenylamino, aryl-(C₁-C₆)-dialkylsilyl, diaryl-(C₁-C₆)-alkylsilyl, triarylsilyl and 5- or 6-membered heterocyclyl, the cyclic moiety of the fourteen last-mentioned radicals

being optionally substituted by one or more radicals selected from the group consisting of halogen, cyano, nitro, amino, hydroxyl, thio, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₃-C₈)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-haloalkylthio, (C₁-C₄)-alkylamino, (C₁-C₄)-haloalkylamino, formyl and (C₁-C₄)-alkanoyl.

7. An acylsulfimide as claimed in claim 1, where the unit SR⁴R⁵ is represented through the following structures from the group A to E:

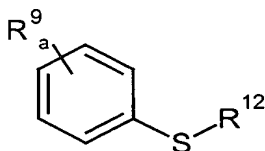
A.



wherein the symbols and indices have the following meanings:

- r is 0, 1;
 D is a direct bond, (C₁-C₄)-alkylene, branched or unbranched, O, S(O)_{0,1,2}, or NR¹¹;
 R^9 is a substituent as defined in claim 6;
 R^{11} is H, (C₁-C₄)-alkyl, branched or unbranched, (C₁-C₄)-alkanoyl, (C₁-C₄)-alkoxycarbonyl, (C₁-C₄)-alkyl- or -dialkylaminocarbonyl or (C₁-C₄)-alkylsulfonyl;

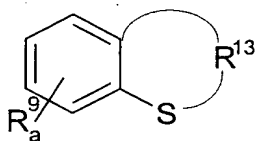
B.



wherein the symbols and indices have the following meanings:

- R^{12} is (C₁-C₈)-alkyl, optionally substituted by an optionally substituted phenyl radical or (C₃-C₆)-cycloalkyl radical, (C₃-C₆)-cycloalkyl, optionally substituted by or condensed with an optionally substituted phenyl radical;
 R^9 is a substituent as defined in claim 6;
 a is 0, 1, 2, 3, 4, or 5, preferably 0, 1 or 2;

C.



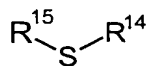
wherein the symbols and indices have the following meanings:

R^9 is a substituent as defined in claim 6;

a is 0, 1, 2, 3 or 4, preferably 0, 1 or 2;

R^{13} is a straight chain or branched (C_2-C_8) -alkanediyl group, optionally substituted by one or two or condensed with an optionally substituted phenyl radical;

D.

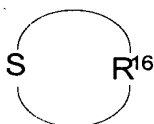


wherein the symbols and indices have the following meanings:

R^{14} , R^{15} are identical or different and are in each case (C_1-C_8) -alkyl, optionally substituted by or condensed with an optionally substituted phenyl radical or (C_3-C_8) -cycloalkyl radical, (C_3-C_6) -cycloalkyl, optionally substituted by or condensed with an optionally substituted phenyl radical;

and

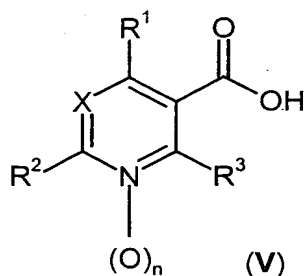
E.



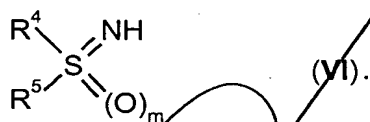
wherein the symbol has the following meaning:

R^{16} is a straight chain or branched (C_2-C_8) -alkanediyl group, optionally substituted by one or two or condensed with an optionally substituted phenyl radical.

8. A process for preparing a compound of formula (I) as claimed in claim 1, wherein Y is oxygen, where a carboxylic acid of the formula (V),

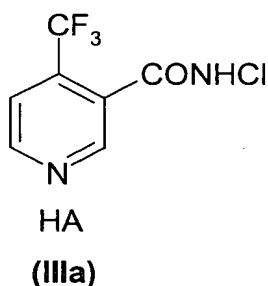


in which R^1 , R^2 , R^3 , X and n are as defined under formula (I) in the form of an activated derivative of this acid is reacted in the presence of a base with a compound of the formula (VI), in which R^4 , R^5 and m are as defined under formula (I)



9. A composition having insecticidal, acaricidal and/or nematicidal action, which comprises at least one compound of the formula (I) as claimed in claim 1.
 10. A composition having insecticidal, acaricidal and/or nematicidal action as claimed in claim 9 in a mixture with carriers and/or surfactants.
 11. The composition as claimed in claim 9, which comprises a further active compound selected from the group consisting of acaricides, fungicides, herbicides, insecticides, nematicides or growth-regulating substances.
 12. A veterinary medicament comprising a compound as claimed in claim 1.
-
13. A method for controlling harmful insects, acarids and nematodes, which comprises applying an effective amount of a compound as claimed in claim 1 to the site where the action is desired.
 14. A method for controlling harmful insects, acarids and nematodes, which comprises applying an effective amount of a composition as claimed in claim 9 to the site where the action is desired.

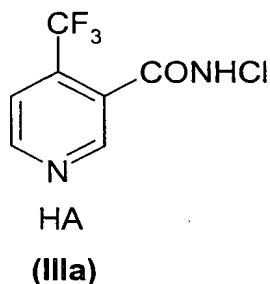
15. A method for protecting useful plants against the undesirable action of harmful insects, acarids and nematodes, which comprises using at least one of the compounds as claimed in claim 1 for treating the seed of the useful plants.
16. A method for protecting useful plants against the undesirable action of harmful insects, acarids and nematodes, which comprises using at least one of the composition as claimed in claim 9 for treating the seed of the useful plants.
17. A process for preparing N-chloro-4-trifluoromethylnicotinamide and salts thereof of the formula (IIIa)



in which A is a non-oxidizable, organic or inorganic anion

by chlorination of 4-trifluoromethylnicotinamide with Cl_2 in aqueous acid and, if appropriate, subsequent anion exchange and/or, if appropriate, reaction with a base, to give N-chloro-4-trifluoromethylnicotinamide.

18. A salt of N-chloro-4-trifluoromethylnicotinamide of the formula (IIIa)



in which A is a non-oxidizable, organic or inorganic anion

19. A salt as claimed in claim 18, wherein A is F , HF_2 , Cl , BF_4 , PF_6 , HSO_4 , $\frac{1}{2} \text{SO}_4$, CH_3COO , CF_3COO , CF_3SO_3 , CH_3SO_3 , $p\text{-CH}_3\text{-C}_6\text{H}_5\text{SO}_3$ or H_2PO_4 .

add
B₂O₃
add
Cl